Calendar No. 570

97TH CONGRESS, 2d Session } SENATE { REPORT No. 97-401

RECLAMATION FEASIBILITY STUDIES—1982

MAY 18 (legislative day, MAY 11), 1982.—Ordered to be printed

Mr. MURKOWSKI, from the Committee on Energy and Natural Resources, submitted the following

REPORT

[To accompany S. 2443]

The Committee on Energy and Natural Resources, to which was referred the bill (S. 2443) to authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource developments having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE

The purpose of S. 2443 is to authorize the Secretary of the Interior to undertake feasibility level investigations of fourteen water resources related developments in eight Western States.

BACKGROUND AND NEED

Section 8 of the Federal Water Project Recreation Act (Public Law 89-72, 79 Stat. 213) provides:

> SEC. 8. Effective on and after July 1, 1966, neither the Secretary of the Interior nor any bureau nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law, any other provisions of law to the contrary notwithstanding.

The studies listed in the bill, S. 2443, based upon appraisal studies conducted by the Department of the Interior's Bureau of Reclamation, appear to warrant feasibility investigations. S. 2443 would provide the authority required by Public Law 89-72 for the feasibility level studies listed in the text of the measure.

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FEASIBILITY INVESTIGATIONS

As recommended by the Senate Committee on Energy and Natural Resources, S. 2443 authorizes the Secretary of the Interior to undertake the following feasibility level investigations:

1. Colville Indian Reservation, Chief Joseph Dam Project, Washington

The estimated cost of the three year study is $685,000. The appraisal level report prepared by the Bureau of Reclamation identifies 17 independent areas which appear to have potential for development of water resources related to irrigation, fish and wildlife, and/or environmental quality enhancement. The proposed feasibility investigation would cover water resource development potential for the entire Colville Indian Reservation.

2. Gibson Dam Powerplant, Sun River Project, Montana

The estimated cost of the three year study of the potential for installation of hydroelectric generating capacity at Gibson Dam and the Sun River Diversion Dam, both features of the Sun River Project, is $400,000. The feasibility investigation will include examination of the potential for the installation of a two unit 11 megawatt powerplant at Gibson Dam and a 106 megawatt unit at the Sun River Diversion Dam and three miles downstream from Gibson Dam. Appraisal level study indicates that the proposed hydroelectric facilities would have the capability of producing 41,900,000 kilowatt hours annually of electricity.

3. Imperial Irrigation District Canal Lining, California

The estimated cost of the two year study is $425,000. The feasibility investigation will determine the costs and benefits to be derived from the lining of canals in the Imperial Irrigation District with concrete to prevent water loss. Preliminary analysis from the appraisal level study indicates that a water saving of approximately 200,000 acre feet of water annually can be achieved by lining 400 miles of presently unlined canals. This would be a water conservation project which could help alleviate future water shortages.

4. New Melones Conveyance System, Central Valley Project, California

The estimated cost of the three years study is $600,000. The investigation will formulate a plan to provide diversion and conveyance facilities from New Melones Reservoir to meet anticipated supplemental water needs in Tuolumne, Calaveras, Stanislaus, San Joaquin, and Merced Counties and other areas near or adjacent to the Stanislaus River that could be served with water from the existing New Melones Reservoir. In addition to agricultural needs, the study will address anticipated municipal and industrial, fishery, recreation, and water quality supply needs.

5. Pilot Butte Powerplant, Riverton Project, Wyoming

The estimated cost of the three year study is $250,000. The proposal will examine the feasibility of replacing an existing (but not operating) 1.7 megawatt powerplant constructed in 1925 with a 2.7 megawatt unit. Potential generation is estimated to be 9,500,000 kilowatt hours annually.

6. Prairie Bend Unit, Pick-Sloan Missouri Basin Program, Nebraska

The estimated cost of the four year study is $1,100,000. The study will examine the potential for irrigation of up to 70,000 acres utilizing water from the Platte River and stabilization of groundwater levels over an area of about 136,000 acres. Multi-objective planning will also examine the potential for outdoor recreation and the enhancement of habitat for waterfowl including the endangered whooping crane.

7. Siletz River Basin Project, Oregon

The estimated cost of this three year study is $650,000. An appraisal level study of the Siletz River Basin was completed by the Bureau of Reclamation in 1980. The feasibility investigation would examine the potential for a water storage site on Big Rock Creek in the upper basin (or a suitable alternative site) for the provision of municipal and industrial water for the Cities of Toledo and Newport. Additional water supply needs for irrigation, fish and wildlife, and recreation also will be examined.

8. Spring Canyon Pumped-Storage Project, Arizona

The estimated cost of the three year study is $1,100,000. The objective of the study is to analyze the potential for development of a 4,000 megawatt pumped-storage peaking facility located on a dry wash within the Lake Mead National Recreation Area. Information supplied to the Committee by the Bureau of Reclamation indicates that "response of the public during public meetings was favorable with no adverse reactions being expressed".

9. Tongue River Dam, Montana

The estimated cost of this three year study is $400,000. The Tongue River Dam is a Montana State operated facility and presently provides a firm annual yield of 40,000 acre feet of water for agricultural purposes of which 7,500 acre feet is used on the Northern Cheyenne Indian Reservation. The Tongue River Dam is considered an unsafe structure and the State of Montana has funded several studies to find ways to correct unsafe conditions and provide additional storage. The State intends to provide some funds for the study as well as the information compiled by the State. Should the feasibility study result in proposal of a project, it is anticipated that authorizing legislation would provide for a joint State-Federal project.

10. All-American Canal Relocation, Boulder Canyon Project, California

The estimated cost of the two year study is $415,000. The proposed study will investigate the potential for construction of a new concrete lined canal parallel to approximately 30 miles of the existing All-American Canal. The intent is to conserve an estimated 70,000 acre feet of water which is presently lost each year from the existing unlined canal.

11. Upper Klamath Offstream Storage, Oregon

The estimated cost of the three year study is $1,340,000. The proposed pumped-storage plan would store flows from Upper Klamath Lake in sites known as Long, Round, and Aspen Lakes, for later re-

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lease through generation facilities as well as existing and expanded downstream generating facilities located on the Klamath River. In addition to power generation, the multi-purpose study will also examine the potential for irrigation, municipal and industrial water supply, recreation, and fishery and water quality benefits.

12. South Dakota Water Deliveries Study, South Dakota

The estimated cost of the two year study is $600,000. The purpose of the study is to investigate the potential for supplying additional water from the Garrison Diversion Unit in North Dakota to the James River in South Dakota. The additional water to be provided to South Dakota has potential for municipal and industrial water supplies, irrigation, recreation, and fish and wildlife purposes along the entire length of the James River.

13. Central South Dakota Water Studies, South Dakota

The estimated cost of the four year study is $2,500,000. The Central South Dakota Water Study (CENDAK) is a proposal to divert water from the Missouri River to serve an area of approximately 400,000 acres in Hughes, Hyde, Hand, Faulk, Spink, and Beadle Counties in central South Dakota. Plan formulation will include evaluation of the potential for using facilities of the partially completed Oahe Project. Of particular interest is that the appraisal level study was undertaken independently by a private engineering firm and financed entirely by non-Federal sources. The Bureau of Reclamation has reviewed the study and has indicated that the CENDAK proposal merits a feasibility level investigation.

14. Blue Holes Reservoir, Wyoming

The estimated cost of the three year study is $670,000. Blue Holes is a potential reservoir site on the Wind River approximately 1.5 miles downstream from Dinwoody Creek. The proposed reservoir would provide a total storage capacity of 357,000 acre feet and a firm yield of 174,000 acre feet annually to be used for irrigation, hydroelectric power generation, municipal and industrial water supply, recreation, and fish and wildlife benefits. The dam would be an earthfill structure 265 feet high and 5,800 feet in length. Of particular note is the action by the Wyoming State Legislature of appropriating $500,000 to be used for the feasibility investigation. The Bureau of Reclamation has been requested by the Wyoming State Water Development Commission to initiate a feasibility level study with the State funds.

LEGISLATIVE HISTORY

S. 2443 was introduced on April 27, 1982, by Senator Murkowski. Customarily, the Senate Committee on Energy and Natural Resources does not hold hearings on legislation to authorize feasibility investigations. The bill embodies study authorities which had previously been included in S. 1553 (Senators Abdnor and Pressler), S. 1711 (Senator Melcher), S. 2091 (Senators Exon and Zorinsky), and other appropriate opportunities which had been called to the attention of the Committee.

COMMITTEE RECOMMENDATION AND TABULATION OF VOTES

The Senate Committee on Energy and Natural Resources, in open business meeting on May 13, 1982, by unanimous vote of a quorum present, recommends that the Senate pass S. 2443 as reported.

The rollcall vote on reporting the measure was 18 yeas and 0 nays as follows:

YEAS	NAYS
Mr. McCLURE	
Mr. HATFIELD	
Mr. WEICKER*	
Mr. DOMENICI*	
Mr. WALLOP	
Mr. WARNER	
Mr. HUMPHREY	
Mr. MURKOWSKI*	
Mr. NICKLES	
Mr. EAST*	
Mr. HEINZ*	
Mr. JACKSON*	
Mr. JOHNSTON	
Mr. BUMPERS*	
Mr. FORD	
Mr. MATSUNAGA	
Mr. MELCHER	
Mr. BRADLEY	

*Indicates vote by proxy.

COST AND BUDGETARY CONSIDERATIONS

The following estimate of costs of this measure has been provided by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, D.C., May 14, 1982.

Hon. JAMES A. McCLURE,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Dirksen Senate Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: Pursuant to Section 403 of the Congressional Budget Act of 1974, the Congressional Budget Office has reviewed S. 2443, a bill to authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource developments, as ordered reported by the Senate Committee on Energy and Natural Resources, May 13, 1982.

The bill authorizes the Secretary of the Interior to engage in feasibility investigations for fourteen federal water resources projects. Assuming necessary funds are appropriated for all of the studies prior to the beginning of fiscal year 1983, and based on information from the Department of the Interior, it is estimated that these studies would cost about $13 million between 1983 and 1985. Outlays would be approximately $4 million in fiscal year 1983, $6 million in fiscal year 1984, and $3 million in fiscal year 1985.

Should the Committee so desire, we would be pleased to provide further details on this estimate.

Sincerely,

RAYMOND C. SCHEPPACH
(For Alice M. Rivlin, Director).

REGULATORY IMPACT EVALUATION

In compliance with paragraph 11(b) of Rule XXVI of the Standing Rules of the Senate, the Committee makes the following evaluation of the regulatory impact which would be incurred on the passage of S. 2443.

It is the Committee's expressed opinion that the bill is not a regulatory measure in the sense of imposing Government established standards or significant responsibilities on private individuals or businesses and that little, if any, additional paperwork would result from enactment of S. 2443 other than that which would normally be associated with such a Federal study program.

EXECUTIVE COMMUNICATIONS

The pertinent legislative report received by the Committee from the Department of the Interior setting forth Executive agency recommendations relating to S. 2443 are set forth below:

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 1 4 1982

Honorable James A. McClure
Chairman, Committee on Energy and
Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Your committee has requested the views of this Department on S. 2443, a bill "To authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource developments."

We support enacment of S. 2443 since the investigations must be completed before the new project initiatives can be recommended and funded in the budget process.

S. 2443 would authorize the Secretary of the Interior to engage in feasibility studies of 14 potential Bureau of Reclamation projects. Appraisal studies, or comparable information, for each of the developments indicate that feasibility studies are justified. The Department proposes to undertake studies as soon as study authorization is available and the work can be scheduled in Bureau of Reclamation's planning program. A background statement on each of the initiatives is enclosed.

The effects of the potential projects on water quality, recreation, fish and wildlife, historic, scenic, archeologic, and aesthetic values will be considered fully in the feasibility studies authorized. We note that there is local support, both on community and State levels, for seeking authorization of feasibility studies of these projects.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

Garrey E. Carruthers

Assistant SECRETARY

Enclosure

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

PROJECT: Chief Joseph Dam Project, Washington — REGION: PN
Colville Indian Reservation

LOCATION: The Colville Indian Reservation is located between the Columbia and Okanogan Rivers in northeastern Washington.

PROJECT DATA: Designs and cost estimates are of appraisal level and were derived for the appraisal investigation, Colville Indian Reservation and adjacent areas, July 1979. The appraisal report identifies 17 independent areas which appear to have potential for some type of development including irrigation, fish and wildlife, and environmental quality enhancement. Data on three of the most promising areas are included below:

North Nespelem Area

Total Construction Cost	Adjustments	Total Allocation
$1,457,000 1/	$15,000	$1,472,000

Program Goals	Cost Allocation
Irrigation	$458,000
Municipal and industrial 2/	476,000
Recreation	340,000
Fish and wildlife	181,000
Migratory waterfowl	2,000
Archeology	15,000
Benefit-cost ratio	2.54

1/ *Construction costs are July 1977 price levels.*
2/ *Since the appraisal study was completed, the Tribe has implemented some measures to provide additional municipal and industrial water. During the feasibility investigation, the municipal and industrial water situation will be reexamined in view of any recent developments.*

Owhi Flat Area

Total Construction Cost	Adjustments	Total Allocation
$447,000 1/	$4,000	$451,000

Program Goals	Cost Allocation
Irrigation	$226,000
Recreation	205,000
Fish and wildlife	13,000
Environmental quality	3,000
Benefit-cost ratio	2.76

1/ Construction costs are July 1977 price levels.

Inchelium Area

Total Construction Cost	Adjustments	Total Allocation
$1,366,000 1/	$14,000	$1,380,000

Program Goals	Cost Allocation
Irrigation	$680,000
Recreation	148,000
Fish and wildlife	370,000
Migratory waterfowl	5,000
Environmental quality	163,000
Archeology	14,000
Benefit-cost ratio	2.29

1/ Construction costs are July 1977 price levels.

DESCRIPTION: The Colville Indian Reservation contains approximately 1.5 million acres and a population of slightly over 5,000. About one-half of the population is Indian. Development of water supplies for irrigation, municipal and industrial use, and enhancement of fish and wildlife resources on the reservation has been limited in the past. Low income levels, unemployment, and other social and economic problems parallel the low level of resource development. Projected water needs of the reservation exceed present reservation uses; about 73,300 acres of scattered lands appear suitable for sprinkler irrigation.

The proposed feasibility investigation would cover water resource development potentials of the entire Colville Indian Reservation, including those potentials identified in the 1979 appraisal report as well as potentials that may later be identified. At any given time the investigation would concentrate on a few areas and reports completed to provide for an orderly and controlled rate of development. Selection of areas for initial and later investigations would be controlled by tribal desires for development, potential for successful development and operation, and demonstration of a satisfactory benefit-cost ratio. The initial phase of the investigation could include the three areas discussed below.

North Nespelem Area

The North Nespelem area, located in the center of the reservation along the Nespelem River, has potential for irrigation development, municipal and domestic water supply improvement, recreation development, fish and wildlife enhancement, and environmental quality enhancement. The study would investigate the feasibility of irrigating about 1,040 acres by pumping ground water. Crops projected would be hay and pasture for a livestock operation.

The appraisal report identified a need for additional municipal and domestic water at Nespelem and the Colville Indian Agency. Since the report was completed, the Tribe has implemented some measures to provide additional municipal and industrial water. The feasibility study would reexamine the municipal and industrial water situation in view of any recent developments.

The feasibility study would also investigate the possibility of pumping ground water into the Nespelem River to maintain minimum streamflows for trout fishery enhancement. Other potentials that would be examined include the establishment of a 1,000-acre greenbelt along the Nespelem River, protection of two wetlands, and construction of a recreation facility.

Owhi Flat Area

The Owhi Flat area is located in the center of the reservation just south of Owhi Lake. Identified potentials include irrigation development, recreation development, and fish and wildlife and environmental quality enhancement. The study would investigate the feasibility of irrigating about 390 acres by pumping ground water. Crops projected would be hay and pasture for a livestock operation. Other potentials that would be examined include a picnic-beach recreation facility, an 80-acre greenbelt on the shore of Owhi Lake, and measures to enhance the lake fishery.

Inchelium Area

The Inchelium area is in the northeastern part of the reservation. Identified potentials include irrigation development, recreation development, and fish and wildlife and environmental quality enhancement. The study would investigate the feasibility or irrigating about 1,270 acres by pumping ground water. Crops projected would be alfalfa, grains, and pasture for a livestock operation.

Other potentials that would be examined include five greenbelts along streams and lakeshores, fishery enhancement, and recreation development near the Tribe's Twin Lakes resort.

STATUS: The Bureau of Reclamation (BR) assisted the Colville tribal council and the Bureau of Indian Affairs (BIA) to develop a water supply for the town of Keller and to reestablish ferry service between the towns of Inchelium and Gifford. An appraisal study of the Colville Indian Reservation was initiated in 1975 and completed in 1978. The planning report discussing the findings of the study and recommending future actions has been completed and distributed to interest publics. Study findings have been reviewed by tribal planners and meetings held with tribal leaders to determine desires regarding future action for resource development.

BR will continue to work with the Tribe and assist in a feasibility study if authorized and funded. Future studies would be closely coordinated with the Tribe; BIA; Fish and Wildlife Service: Washington State Department of Fish and Game; and other local, State, and Federal agencies.

JUSTIFICATION: Development of water and related land resources on the reservation have been limited in the past. Low income levels, unemployment, and other social and economic problems parallel the low level of resource development. There is a need to develop the water and related land resources to increase employment and revenue and raise the standard of living of the people throughout the reservation. Resource development is needed to enable the Indian people to achieve greater self-determination.

Feasibility study authority should be broad enough to cover the entire reservation, since all potentials may not have been covered in the 1979 appraisal report. The need for power has become more critical, so power potentials would need to be reexamined. Tribal interests, priorities, and constraints may have changed since completion of the appraisal report. A wide latitude for study within reservation boundaries is needed to best meet current tribal interests and to assure that the most needed potentials are investigated.

Development of the three areas shown under "Project Data" appear to have the greatest potential for success with the lowest costs and benefit-cost ratio of the 17 areas identified on the reservation. Many tribal members have prior experience with livestock, which is projected for these three areas. Economic returns from a livestock operaton could occur in the first year compared to several years delay with orchard development projected for many of the other 17 areas identified in the 1979 appraisal report.

PROJECT INTEREST: The subcommittees on public works of the Senate and House appropriations committees, in their fiscal year 1974 committee reports, directed the Bureau of Reclamation to study irrigation and other water needs of the Colville Indians.

The Colville Indians have seen water and land resource developments occur all around their reservation and would like to develop their own resources. The Tribe is seeking congressional authorization for a feasibility investigation of the entire reservation and will seek immediate funding for study of the North Nespelem, Owhi Flat, and Inchelium areas. The Tribe believes development of the natural resources available to them will improve their standard of living and enable them to achieve greater self-determination. The Tribe is also concerned that they might lose their water rights under the Winters Doctrine if the water of the reservation is not put to beneficial use.

REMARKS: Total estimated cost of the feasibility study would be $725,000 over a 3-year study period. Estimated first year cost is $100,000.

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Background Statement

PROJECT: Gibson Powerplant

LOCATION: Gibson Dam, Sun River

PROJECT DATA: The following data are from the November 1980 draft appraisal report on Gibson Powerplant:

Capacity (kw)	Generation (kwh)	Cost	B/C Ratio
12,600	41,900,000	$15,000,000	1.08

DESCRIPTION: Gibson Dam was constructed in 1926-27 to store and regulate the Sun River for irrigation of the Sun River Project. The potential exists for 12.6 megawatts of hydroelectric generating capacity to be installed.

Appraisal studies indicate economic feasibility of a two unit 11 megawatt powerplant at Gibson Dam, and a single unit 1.6 megawatt plant at the Sun River Diversion Dam about three miles downstream from Gibson Dam. About 20 miles of transmission line would be necessary.

Gibson Dam and Sun River Diversion Dam are existing facilities. Gibson Dam outlet works and an existing tunnel at Sun River Diversion Dam would be utilized for the powerplants. The inflow to Sun River Diversion Dam is essentially the same as that released from Gibson Dam. Therefore, operationally, the two powerplants are interrelated and will be examined as such. Releases from Gibson Dam are regulated primarily for irrigation purposes. No change in operational criteria is planned because of the power potential.

STATUS: Appraisal studies have been completed and a draft report is in the review process. The studies indicate feasibility investigations are warranted.

JUSTIFICATION: The energy shortage, conservation of nonrenewable resources, and the clean pollution free qualities of hydroelectric generation make this proposal very attractive. Although relatively small, this and other similar potential powerplants could make significant contributions toward future energy supplies.

PROJECT INTEREST: Interest in additional power has been continually expressed by customers of Pick-Sloan Missouri Basin power, especially since many will have to look elsewhere to meet their expanding needs which cannot be supplied by Federal power. These customers include cooperatives, public power districts, municipalities, and various state entities.

REMARKS: The total estimated cost of the 3 year feasibility study would be $400,000 with $100,000 required for the first year.

Region: LC

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

PROJECT: Imperial Irrigation District Canal Lining

LOCATION: The canals to be lined are located in Imperial Irrigation District, Imperial County in Southern California.

DESCRIPTION: A feasibility level study is required to determine the cost and benefits of concrete lining canals in the Imperial Irrigation District. The study will investigate current unlined canal losses, locate specific canals to be lined, determine costs of concrete lining and benefits of saving the water. Total construction cost of lining the 400 miles of canal is estimated at $180 million. The IID has an excellent ongoing program to line canals on a voluntary basis. A little over half the 1627 miles of canals in IID are concrete lined. Funding has been limited, however, to about $1 million each year, which will line about 20 miles of canal per year. And since it is on a participation basis with the landowner, not all the canals will be lined. It is expected the M&I users in California will pay for the major portion of the canal lining.

STATUS: A special study is underway investigating structural and nonstructural measures to conserve water in IID. These measures include canal lining, regulating reservoirs, system automation, improved management and others. The study will be completed in 1983. Preliminary analysis from the appraisal study shows that approximately 200,000 acre-feet of seepage can be prevented by lining about 400 miles of presently unlined canals at an average cost of about $50 per acre-foot.

JUSTIFICATION: When the Central Arizona Project begins diverting Colorado River water and as development of water projects continues, demand for water will approach the natural supply of the Colorado River. This water conservation project would help alleviate future water shortages.

PROJECT INTERESTS: The Seven-Party Priorities Agreement apportions California's Colorado River water allotment of 4.4 million acre-feet per year among the various water users. The agricultural water users are entitled to 3,850,000 acre-feet, of which IID is a part. Strong local and State support exists for this study as current uses in California exceed this amount and must be reduced to their legal entitlements soon after the Central Arizona Project is completed. This canal lining project would assist in meeting these allotments without reducing presently irrigated acreage. Law suits by homeowners and landowners near the Salton Sea claiming damages caused by inefficient use of water have provided incentive to the Imperial Irrigation District and water users in the Imperial Valley to find more ways to conserve water. An expedited canal lining program could reduce inflows to the Salton Sea sufficiently to bring water levels back under control.

INVESTIGATION COSTS: The estimated cost of the two-year feasibility study is $550,000 with $312,000 required for the first year.

Background Statement

Sheet 1 of 2

PROJECT: Central Valley Project, Stanislaus River Division, New Melones Conveyance System Study

REGION: MP

LOCATION: The study area would include portions of Tuolumne, Calaveras, Stanislaus, San Joaquin, and Merced Counties. Those valley and foothill areas situated either adjacent to or near the Stanislaus River that could be served water from the New Melones Reservoir would be included in the study area.

PROJECT DATA: A Special Report and the Final Supplement to the Final Environmental Statement on Basin Alternatives, Water Allocations and Reservoir Operations--New Melones Lake, Stanislaus River -- were completed and filed with the Environmental Protection Agency in September 1980. The pertinent information derived from the "Stanislaus River Basin" studies such as water requirements and needs, preliminary conveyance systems, and other items related to allocation of New Melones supply would be utilized in this second-phase study in evaluating plans for meeting the area water needs.

DESCRIPTION: This investigation will formulate and test the feasibility of a plan to provide the necessary diversion and conveyance facilities from New Melones Reservoir and the Stanislaus River alongwith other possible sources in order to meet anticipated supplemental water needs within the proposed "Stanislaus River Basin Area and adjacent areas." Specific proposals and plans would be identified and evaluated. A plan would be developed to meet agricultural and municipal and industrial water requirements and provide for recreation, fishery, and water quality needs in the tributary streams and adjacent areas. The plan would also provide for some relief from existing conditions of ground-water overdraft that continues in the valley areas.

STATUS: The construction of conveyance and distribution systems was not authorized in Public Law 87-874 dated October 1962, that modified the authorization for the New Melones Project. It is contemplated that after discussions are held with potential water contractors following a selection of the Stanislaus River Basin by the Secretary of the Interior, a determination can then be made as to whether the facilities would be constructed by non-Federal entities or by the Federal Government. Federal construction would require additional authorization. This second-phase study would be closely related to the "Stanislaus River Basin" and adjacent area studies that will delineate the area that could use New Melones water supply. Federal development for possible conveyance and distribution facilities that may be needed would be evaluated.

JUSTIFICATION: In the proposed study area, there is a shortage of both agricultural and municipal and industrial water supplies. There are over 30,000 acres of good agricultural lands in need of water to supplement inadequate ground-water supplies. The potential lands and areas to be served lie at elevations ranging from 200 to 400 feet and the New Melones Project supply appears to be in the near future the only available remaining source of water to meet the needs within this area. These lands are suitable for a variety of specialized agricultural crops which include grapes, peaches, citrus, walnuts, almonds, cherries, irrigated pasture,

alfalfa, sugar beets, rice, and corn. There is also additional opportunity to provide for fishery and recreation enhancement in some of the tributary streams.

A regional-type approach will be used to formulate potential development and management plans that will meet supplemental water needs in portions of Tuolumne, Calaveras, Stanislaus, San Joaquin, and possibly Merced Counties. The study program would be conducted in cooperation with other Federal, State, and local agencies.

New Melones Dam has been built but the realization of all benefits anticipated at the time the project was authorized including repayment of the Federal investment cannot be met until the distribution system is built.

LOCAL INTEREST: Realizing a need for supplemental water supplies at the present time and in the future, several water-using entities along with the Board of Supervisors in Calaveras, Tuolumne, Stanislaus, San Joaquin, and Merced Counties have expressed strong interest and support for such a study. The local interests believe this investigation would be an important step toward providing conveyance facilities for New Melones water to meet the water needs in these foothill and valley areas.

REMARKS: Total estimated cost for a 3-year feasibility investigation: $1,300,000; first year requirement: $150,000.

Background Statement

PROJECT: Pilot Butte Powerplant, Riverton Unit REGION: UM

LOCATION: Pilot Butte Reservoir, Fremont County, Wyoming

DESCRIPTION: Irrigation water for Riverton Unit is diverted from Wind River into Wyoming Canal and carried to the distribution system. Water is dropped from Wyoming Canal into Pilot Butte Reservoir for regulation and storage. In 1925 the 1.7 MW Pilot Butte Powerplant was constructed on the reservoir to use the drop from Wyoming Canal to the reservoir for power. The powerplant was shut down in 1973 because operation and maintenance costs exceed revenues generated by the plant.

Potential exists to replace this installation with a 2.7 MW powerplant. Annual generation would be 9.5 GWH. A new penstock and powerplant would be required. The existing switchyard would be modified and the existing transmission line could be used as is. A larger plant might be justified if diversions are made specifically for power generation.

STATUS: Appraisal-level studies made as part of the Wind River Study indicate that the plant would be economically justified. No detailed studies have been made.

JUSTIFICATION: The energy shortage, conservation of nonrenewable resources, and the clean, pollution-free qualities of hydroelectric generation made this proposal very attractive. Although relatively small, this and other similar potential powerplants could make significant contributions toward energy self-sufficiency.

PROJECT INTEREST: The Midvale District (Riverton Unit) Board of Directors and other area residents have encouraged the study. The Wyoming Municipal Power Agency forecasts an area need for an additional 4 MW capacity in the next 10 years.

REMARKS: The total estimated cost of the feasibility investigation is $250,000 with $80,000 required for the first year.

Background Statement

PROJECT: Prairie Bend Unit, Nebraska
Pick-Sloan Missouri Basin Program

LOCATION: The project is located in the Platte River Basin area north of the Platte River in eastern Buffalo County and western Hall County in Central Nebraska.

DESCRIPTION: The study would develop and assess multiobjective alternatives to irrigate up to about 70,000 acres of land using water from the Platte River, stabilize ground water in an area of about 136,000 total acres, provide outdoor recreation, maintain and enhance habitat for waterfowl including the endangered whooping crane, enhance the quality of ground water and other beneficial uses. The study would evaluate the availability of water resources in the area for all beneficial uses and the physical and economic feasibility of alternatives.

STATUS: Considerable appraisal level data is already available from previous studies. The once proposed Nebraska Mid-State Division project included a part of the Prairie Bend Unit study area. A subappraisal level evaluation of a single-purpose irrigation project utilizing conjunctive use of surface and ground water was made in 1979. The plan indicated the potential for developing a viable project from both an engineering and economic standpoint. As part of the ongoing Upper Platte River Study, three technical studies are evaluating the ecology, hydrology, and implications of alternative water uses nearing completion and will provide valuable data and information to the Prairie Bend study.

JUSTIFICATION: The Prairie Bend Unit is located in a predominately agricultural area with several rural-orientated towns. The closest large metropolis is Grand Island, Nebraska, a city of over 30,000 population. Private well irrigation development has resulted in declines in ground-water levels causing increased pumping lifts, operating costs, and energy use. Some of the area and towns are experiencing deteriorating ground-water quality and are having to seek other locations for wells for domestic and municipal uses. Pumping may be affecting the wet meadow complexes which are necessary habitat for the endangered whooping crane and other migratory water fowl. Also, some of the creeks and drains in the area experience frequent flooding. Development of a multipurpose project would maintain a reliable irrigation economy by means of conjunctive use of ground and surface water, provide flood protection, assist in maintaining desired habitat for migratory birds including the sandhill and whooping cranes and other wildlife, provide for water-based recreation, a sports fishery, save energy, and improve ground-water quality and regulate streamflows.

PROJECT INTEREST: The Central Nebraska Conservancy Association and the Central Platte Natural Resource Districts are sponsors of the project and are seeking authorization for feasibility studies. The Central Nebraska Conservation Association has a water right application (priority date, April 1, 1976) on file with the State of Nebraska to divert a portion of the Platte River in the off-season for irrigation and off-stream storage. They have held numerous meetings within the area and have obtained the support of the Grand Island Chamber of Commerce and several State Senators. There is reported considerable support for the feasibility study coming from the public meetings and numerous individual contacts made by the sponsors.

The trustees of the Platte River Whooping Crane Habitat Maintenance Trust have expressed an interest in cooperating with the Central Platte Natural Resources District toward a study to develop storage in the Platte River Basin for various uses, one of which would be to provide water supplies to assist in maintaining desired habitat for sandhill cranes and the endangered whooping crane.

REMARKS: The total estimated cost of the feasibility investigation amounts to $1,600,000 with a first-year requirement of $150,000. The study is estimated to take 4 years to complete.

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

PROJECT: Siletz River Basin, Oregon REGION: PN

LOCATION: Mid-Oregon Coast, Lincoln and Polk Counties, Oregon

PROJECT DATA: Design and cost estimate for construction of Big Rock Creek dam and reservoir are appraisal level, October 1979 prices. Hydrology data, upon which reservoir sizing is based, are also appraisal level.

Total Construction Cost	Adjustments	Total Allocation
$21,340,000	--	$21,340,000 1/

Program Goals

Municipal and industrial water supply	10,400 acre-feet
Irrigation	3,900 acre-feet
Fish and environmental quality	
Recreation	

B/C ratio 1.14 to 1.00 2/

1/ *Costs are for construction of a dam and reservoir to impound 15,000 acre-feet at the Big Rock Creek site. Costs include all costs of the dam and reservoir, but do not include interest during construction.*

2/ *This plan is based on an appraisal level evaluation of a core plan to meet municipal and industrial and Siletz River irrigation needs.*

DESCRIPTION: An appraisal study of Siletz River basin water conditions, needs, and potentials for project development was completed by the Bureau of Reclamation in 1980. The study indicated that a storage project could make a substantial contribution toward meeting Siletz basin municipal and industrial, irrigation, and environmental quality needs. Although the emphasis of the feasibility study would be on the most favorable storage site evaluated in the appraisal study (Big Rock Creek), other water supply alternatives would be reviewed in addition to any new potentials that may be identified.

A 15,000-acre-foot reservoir at the Big Rock Creek site would provide releases from storage to be diverted downstream for municipal and industrial and irrigation use. Downstream diversion facilities already exist but would require enlargement. The diversion facilities are owned and operated by the City of Toledo and the Georgia Pacific Corporation, and these entities and the City of Newport would be responsible for financing and constructing enlarged diversion facilities. Water for irrigation would be pumped from Rock Creek and Siletz River for use on streamside lands by private facilities. Recreation facilities would be provided at the reservoir site. Fish habitat in the stream downstream from the dam could be enhanced by the increased flows. Anadronous fish could also be enhanced by providing increased flows to an existing hatchery.

The Big Rock Creek reservoir site is in an undeveloped area that presently is used for timber production by several companies. The watershed above the dam contains 6.3 square miles of drainage area with an average annual runoff of 35,000 acre-feet. To impound 15,000 acre-feet of storage, a dam 118 feet high and about 550 feet in length would be required. The site is upstream from a natural waterfall, which according to the Oregon Department of Fish and Wildlife is an impassable barrier to anadromous fish migration. Since anadromous fish do not presently use the area which would be flooded by the reservoir, adverse impacts on fish resources would be minimal. However, wildlife habitat contained within the reservoir site would require mitigation measures.

The dam and reservoir site have been mapped to feasibility study accuracy, but further geologic studies would be necessary during the feasibility study. Additional drilling would be required along the dam axis and at structure sites to determine the adequacy of the foundation and to obtain design data. A landslide study program, materials exploration studies, and seismic analysis would also be required in the feasibility study.

The Siletz River is widely known for its steelhead and salmon fishing. Storage development at the Big Rock Creek site would improve the stream even more by augmenting streamflows during the normal low flow season in late sumer and early fall. Fish habitat analyses, requiring the gathering of new field data, would be necessary to upgrade appraisal level fish benefits to feasibility level. In addition, further studies would be required to develop a feasibility level wildlife compensation plan for the reservoir site.

One alternative plan developed and evaluated at the appraisal level would increase reservoir size from 15,000 to 34,000 acre-feet. The additional storage would be allocated to instream flow augmentation for anadromous fish and other environmental quality components. Appraisal level analysis indicated a very significant enhancement for anadromous fish with this plan. Although the total plan lacked economic justification with a benefit-cost ratio of .80 to 1.00, the combined economic and environmental benefits were

judged to exceed the combined economic and environmental costs. This plan will be reviewed in the feasibility study.

The Big Rock Creek reservoir site is in Polk County, essentially at the crest of the Coast Range. The primary water needs are on the coastal side of the mountains in Lincoln County, but Polk County Commissioners requested that the water needs in Polk County be considered also. Water supply capability of the Big Rock Creek reservoir site is limited. An alternative plan formulated at the appraisal level indicated that a transbasin diversion to meet Polk County irrigation and instream flow needs along the Luckiamute River could not be economically justified.

STATUS: An appraisal study of the Siletz River basin was completed in 1980. The appraisal report was distributed to the public in 1981.

JUSTIFICATION: This project would be primarily a municipal and industrial water supply project which would also meet some needs for irrigation, fish, and recreation. The study area has a history of water supply problems for municipal and industrial use. Streams which are currently supporting municipal and industrial water diversions are overappropriated and cannot provide additional water during the critical June through October period. Similarly, the overappropriated streams limit expansion for irrigation and fish production.

Present water supplies for the cities of Newport, Toledo, and Siletz will not be adequate to meet projected needs in about 10 years. By year 2010, projected needs are expected to exceed present supplies by 10,400 acre-feet per year. The major industrial water users in the study area are wood products and seafood processing plants. Projected water needs for these industries make up about half of the projected deficit.

Alternatives to new storage development as a water supply do not exist, from a practical standpoint. Much of Lincoln has poor ground water potential. The majority of the county is composed of impermeable rock units incapable of yielding large amounts of ground water. Streams and rivers are essentially all appropriated for existing uses during the high water use season. Conservation measures are now being implemented, but the potential water savings will not meet the projected needs. Seawater conversion and weather modification were also evaluated at the appraisal level; neither was found to be practicable.

Irrigation of agricultural lands in Lincoln County is presently limited because water is not available. Lands and climate are suitable for expanding irrigation of specialty crops, but the acreage of such development probably would be limited to 2,000-3,000 acres.

Other needs which could be met by a storage project at the Big Rock Creek site include anadromous fish enhancement and slack-water recreation.

LOCAL INTEREST: The Cities of Newport, Toledo, Siletz, the Seal Rock Water District, and water-related industries in central Lincoln County are concerned about the availability of municipal and industrial water supply to meet future needs. They retained a private consulting firm to research the various grant and assistance programs that are available and to recommend an action plan. Lincoln County has prepared a "Comprehensive Water, Sewerage, and Solid Waste Management Plan," to aid in defining needs and setting priorities. Entities in the central portion of the county are actively pursuing a solution to their water management problems with the nucleus of effort centered with the Cities of Newport, Toledo, and Siletz; Seal Rock Water District; and some local industries. In addition, a need has been expressed by fishery agencies to provide storage for flow augmentation in the Siletz River for anadromous fish enhancement.

REMARKS: Total estimated cost of the 3-1/2-year feasibility study would be $695,000 with first year funding of $220,000.

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

PROJECT: Spring Canyon Pumped-Storage Project

LOCATION: The Spring Canyon Pumped-Storage site is located in a dry wash within the Lake Mead National Recreation Area in Mohave County, Arizona, about 10 and 70 airmiles, respectively, east of Temple Bar, Arizona, and Boulder City, Nevada.

PROJECT DATA: The estimates provided for the pumped-storage project are appraisal level. The estimates are based on data from private utilities, Western Area Power Administration, the Federal Register, and other Federal documents. The engineering estimates were done by the E&R Center and the Regional Office.

Total Construction Cost - $1,259,000,000
First Stage - $ 846,500,000
Total Allocation - $1,259,000,000

	Program Goals	Cost Allocation
Power	4,000 MS (multistage-1,000-MW increments)	$1,259,000,000

B/C ratio 1.5:1 (at 13-percent plant factor)

DESCRIPTION: The objective of this investigation is to determine the feasibility of the potential development of a pumped-storage facility in producing new generating capacity to meet anticipated peaking power requirements in the Pacific Southwest marketing area. The preferred plan provides for an ultimate capability to produce 4,000 MW of peaking power. Since this would exceed initial market demands, the project could be constructed in stages. Initially, the dam, dikes, underground powerhouse, and penstock tailrace tunnel complex would be constructed to ultimate size. The pump generators, switchyard, and transmission lines could be constructed to provide 1,000 MW increments of peaking power to come on line as the demand requires. Present studies indicate a 10-year interval. If an unforeseen technological breakthrough should occur that would eliminate the

need for additional hydro peaking capacity after the first stage was constructed, the single stage would still have a favorable benefit/cost ratio of 1.3:1. The reservoir would have a maximum capacity of 218,000 acre-feet with an annual evaporation of 11,800 acre-feet. The average operating head would be 776 feet. Approximately 50 percent of the transmission line right-of-way is on Federal land.

Environmental studies have not indicated any significant adverse environmental impacts. The response of the public during public meetings was favorable with no adverse reactions being expressed.

STATUS: The potential Spring Canyon Project was identified and examined under the special investigation entitled "Reclamation and Energy Resources." The appraisal level data indicate that the project is engineeringly feasible and economically justified. Feasibility level studies are warrented.

JUSTIFICATION: Peaking power produced at Spring Canyon appears to be marketable in the Pacific Southwest marketing area. It is estimated that the Pacific Southwest area will require an additional 2,700 MW of peaking capacity during the 10-year period of 1980 to 1990. It can be anticipated that the requirement for peaking capacity will continue to increase in future years. The Spring Canyon Project has both the flexibility and capability of supplying a significant portion of these requirements with pump-generator units being installed as needed. The four-stage project has a favorable benefit/cost ratio of 1.5:1. If, for any reason, the project were terminated after the first stage, the benefit/cost ratio would still be 1.3:1. Low value off-peak energy from base load coal or nuclear powerplants would be purchased to pump the water from Lake Mead to the Spring Canyon reservoir. This water would then be released through turbines to generate power during peak load periods replacing gas or oil-fired combustion turbines which would otherwise be utilized to supply this peaking power. Operating at a 10-percent plant factor, each 1,000 MW of installed capacity would conserve about 1.5 million barrels of No. 2 distillate per year on a regionwide scaie.

REMARKS: Total estimated cost of the 3-year feasibility investigation is $1,300,000. The first year requirement: $412,000.

BACKGROUND STATEMENT

PROJECT: Tongue River Dam

LOCATION: Tongue River in southeastern Montana, near the border with Wyoming

DESCRIPTION: Tongue River Dam and Reservoir provide irrigation water supply, M&I supply, flood control, and recreation. Capacity is 68,000 acre-feet with a firm annual yield of 40,000 acre-feet. About 7,500 acre-feet are used on the Northern Cheyenne Indian Reservation.

The Tongue River Dam has been identified as an unsafe dam. During high runoff in 1978, the spillway was severely damaged.

STATUS: The State has funded several studies to find ways to correct the unsafe condition and, if possible, provide additional storage. Alternatives have been developed that range from breaching or rebuilding the dam to building a larger dam possibly with a power generating plant. Several potential damsites have been located. The State proposes that the information available be provided to the Bureau of Reclamation as a basis for a feasibility study. Reclamation would go through a plan formulation process to provide information to be used in selecting the two most desirable alternatives. Reclamation would then complete the geologic investigations for these sites, design and estimate the dam at the feasibility level, perform economic analyses, and make an environmental impact study. The State would provide some funds for the plan formulation work, negotiate allocations of water to the Northern Cheyenne Tribe and for M&I and irrigation use, and determine the legal status of all potential users. The Tongue River dam and Reservoir, at present a State-operated and generated facility, would become a joint State-Federal project if modified under this program. It is expected that industrial water users will pay for the major portion of the reformulated project.

JUSTIFICATION: In its present condition, the dam would fail in a moderately large flood. A boarding school, several communities, and a number of rural dwellings lie in the path of the outwash from a potential failure. Failure of the dam would cause much property damage and possibly loss of life.

PROJECT INTEREST: Interest in this study has been expressed by the Montana Department of Natural Resources and Conservation; the Bureau of Indian Affairs; the Northern Cheyenne Indian Tribe; the Northern Plains Resource Council; the Montana Department of Fish, Wildlife and Parks; the U.S. Fish and Wildlife Service; and local irrigation districts.

REMARKS: The total estimated cost of the 3 year feasibility investigation is $400,000 with $150,000 required for the first year.

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

PROJECT: Water Conservation and Efficient Use Program, All-American Canal Relocation Project

LOCATION: The All-American Canal relocation area is in Imperial County, California. It begine 5 miles west of Yuma, Arizona, and extends west to Drop No. 4, which is about 10 miles southeast of Holtville, California.

DESCRIPTION: The All-American Canal was constructed in the 1940's to convey water from the Colorado River to the Imperial and Coachella Valleys in California. Since the canal is unlined, a significant quantity of water is lost through seepage. Lining the canal would provide opportunity to make beneficial use of the seepage water which now either contributes to the high ground-water problem in the Imperial Valley or provides groundwater aquifers in Mexico with a constant replenishment supply. The Imperial Irrigation District and Coachella Valley Water District irrigate year round so the All-American Canal cannot be shut down for any length of time. The most recommended plan for conserving the seepage water is to build a new concrete-lined canal next to the present alinement. About 30 miles of the canal would be relocated between Pilot Knob and Drop No. 4. Tie-in to the existing canal at drop structures and highway crossings would permit the use of these facilities in the new canal. It is expected that M&I users in California will pay for the major portion of the project costs.

STATUS: The "Reject Stream Replacement Study, Special Report," June, 1980, presented a plan for relocating and lining the All-American Canal in an effort to conserve seepage losses that could be used to replace the Yuma Desalting Plant reject stream. The estimated cost of the project was $104,000,000. That report indicated a conserved water cost of about $110 per acre-foot and acceptance by affected entities. Environmental impacts and mitigation possibilities must be studied further. Institutional implications of necessary changes in water exchange agreements, existing contracts, compacts, etc. would need to be addressed.

JUSTIFICATION: Provisional records from the Imperial Irrigation District show a potential saving of about 70,000 acre-feet of water per year by lining the All-American Canal between Pilot Knob and Drop No. 4. As full development of Colorado River water occurs, shortages are anticipated and conserving seepage losses is one of the less costly sources of additional water supplies.

PROJECT INTERESTS: The Colorado River Board of California has indicated support for this project with the condition that the Federal Government would not obtain permanent rights to the salvaged water. The Imperial Irrigation District and Coachella Valley Water District have indicated interest in further studies. Concern has been expressed by the Fish and Wildlife Service that construction activities within the sand dunes may adversely impact sensitive plants and wildlife.

INVESTIGATION COSTS: The total estimated cost of the two year feasibility investigation is $490,000. The first year requirement: $150,000.

Region: MP

Background Statement
General Investigations
Feasibility Investigations

Project: Klamath Project, Upper Klamath Offstream Storage Study

Location: The Round/Long and Aspen Dams and Reservoir sites are located in Klamath County, Oregon.

Description: Long, Round, and Aspen Lakes, either singly or jointly, would be the logical Upper Klamath Basin development for meeting this offstream storage need. The offstream site(s), located west of and 300 feet above Upper Klamath Lake, would be filled by pumping surplus spring runoff entering Upper Klamath Lake. The stored water would then be available for various uses during dry years, for seasonal power generation and other seasonal uses and for daily peaking power. Flexibility in maintaining Upper Klamath Lake elevation would be enhanced.

Status: A reconnaissance report on the Upper Klamath Basin was completed in September 1971. The potential pump storage plan was evaluated on a sub-appraisal basis as part of the Butte Valley Division study published as a concluding report in fiscal year 1981. An appraisal study was initiated in fiscal year 1982 and is scheduled for completion in fiscal year 1983. The Bureau of Reclamation is jointly developing a work schedule and plan of study for this appraisal study with Pacific Power and Light Company. A formal contract agreement will be signed as soon as possible.

Justification: The need for power generation in the Pacific Northwest is anticipated to change by the 1990's requiring more seasonal peaking. Hydropower is a logical source for meeting this demand. Additional conservation storage in the vicinity of Upper Klamath Lake, by providing an improved seasonal yield in normal years and carryover storage in dry years, would enhance downstream power generation capabilities at existing and planned future Klamath River facilities.

Recent dry years have heightened concerns of irrigators about the adequacy of Upper Klamath Lake as a water supply. Additional conservation storage is sought to assure a firm supply for existing and possible expanded irrigated agriculture.

Upper Klamath Lake, with over 90,000 surface areas, when full, is under-utilized for most of the recreation season because of poor quality, resulting from abundant algae blooms. Operational changes which would allow the lake to be maintained at a higher summer elevation are anticipated to have a beneficial impact on this problem. Higher water levels during late summer and fall would also be favorable for waterfowl. The adjacent Upper Klamath National Wildlife Refuge has experienced outbreaks of avian botulism, a major waterfowl disease, during periods of low water levels.

In recent dry years deficiencies have occurred in downstream fish flows important for the anadromous fishery. These downstream flows are directly dependent on available Upper Klamath Lake water supply in late summer and early fall.

Project Interest: There is high local and State of Oregon support for the study and there is the potential for up-front cost sharing for both investigation and construction costs by the Pacific Power and Light Company.

Investigation costs: Funds in the amount of $1,125,000 would be required to conduct this 3-year investigation with $300,000 required for the first year.

Region: UM

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

STUDY: SOUTH DAKOTA WATER DELIVERIES STUDY, SOUTH DAKOTA

LOCATION: A 30-mile corridor (15 miles on each side of the James River) extending from the Garrrison Diversion Unit in North Dakota to the James River in South Dakota

DESCRIPTION: The purpose of this study is to investigate the potential of supplying additional water from the Garrison Diversion Unit in North Dakota to the James River in South Dakota. The additional water provided to South Dakota would be used for municipal, industrial, irrigation, recreational, and fish and wildlife purposes along the entire James River area in South Dakota. The study would include public involvement, hydrologic and environmental studies, identification of lands which can be served for irrigation, engineering designs and cost estimates, and economic analyses.

A Garrison Study Management Board has been created which includes the two conservancy sub-districts along the James River in South Dakota. Considerable interest has been generated by the creation of this Board and local support appears evident.

STATUS: Funds in the amount of $100,000 were made available to the Bureau to initiate investigations in FY82. Technical assistance was provided the State of South Dakota in the form of a special report in January 1982. This report was at a subappraisal level and further studies are needed to determine feasibility. The plan provides for a system which includes a bypass canal around Sand Lake, two offstream ring-dike reservoirs, one offstream tributary dam and reservoir, pumping plants and James River channel restoration.

In cooperation with the State of South Dakota, a plan of study has been developed to complete an analysis by August 31, 1982 on alternative plans using all, none or some of the facilities identified in the report. In addition, the state is to make a needs-and-benefit analysis on fish and wildlife, recreation, flood control, municipal use, irrigation and water rights will be completed at the same time. A hydrology model and an operations study on the various alternatives is to be conducted no later than December 31, 1982. At that time the extent of the project and a final plan for feasibility will be determined.

JUSTIFICATION: An estimate of the amount of water that could be provided the State of South Dakota above that delivered in the Garrison Diversion Unit is 102,600 acre-feet in annual median flow. It is the desire of the State of South Dakota to utilize this excess water. The cost estimates will depend on what alternative is ultimately selected. We request authorization to proceed with feasibility studies in 1984 if this project proves viable as the State of South Dakota and local interests have given this project high priority, and want to proceed as quickly as possible with development.

PROJECT INTEREST: The project is supported by the State of South Dakota Department of Water and Natural Resources. On May 13, 1981, Governor Janklow established a Garrison Study Management Board to conduct and coordinate studies on the potential of providing water service along the James River. The State is conducting some of the investigations mentioned above to help accelerate the appraisal study.

REMARKS: Funds in the amount of $850,000 would be required for this 2-year investigation. First year funding would be $700,000.

BACKGROUND STATEMENT
GENERAL INVESTIGATIONS
FEASIBILITY INVESTIGATIONS

Region: UM

Project: Central South Dakota Water Studies (CENDAK)

Location: Hughes, Hyde, Hand, Faulk, Spink and Beadle Counties in Central South Dakota

Description: The CENDAK project is a proposal to divert water from the Missouri River to serve an area of approximately 400,000 acres in Hughes, Hyde, Hand, Faulk, Spink and Beadle Counties of Central South Dakota. The Oahe Pumping Plant would pump water from the Oahe Reservoir on the Missouri River near Pierre, and a system of canals, laterals, and pipeline would extend eastward to the vicinity of the city of Huron. The main features of the plan include the 3,200 ft^3/s capacity Oahe Pumping Plant and Pierre Canal, the 381,000 acre-foot Blunt Reservoir, and the 7,300 ft^3/s Highmore Canal. The Oahe Pumping Plant, Pierre Canal, and Blunt Reservoir are all part of the partially completed Oahe Project.

Status: Interested landowners contributed money to pay for an appraisal conducted by a consulting firm, CH2M Hill. This appraisal study was completed in September 1981, and a report was prepared entitled CENDAK Irrigation Project Master Plan. The Bureau was requested by the State of South Dakota to review this appraisal report. The review was made to determine if the appraisal study completed by the consultants was adequate to justify a feasibility-level study under Federal standards. In addition, the State of South Dakota asked the Bureau to analyze the CENDAK Plan as a potential project for inclusion in the State Water Plan as a P.L. 84-130 project.

The CENDAK Irrigation Project Master Plan is based on a project area of approximately 400,000 acres, with 335,000 acres proposed for water service. This number was derived from a list of landowners that indicated an interest in irrigation and contributed toward the consultant's investigation. Only limited information was available concerning the suitability of the project lands identified in the consultant's report. Therefore, it is necessary that detailed land classification and drainage investigations be conducted.

Justification: The project is designed to develop sufficient land for irrigation so that economic growth can be promoted in central South Dakota. Based on the total area served and productively using existing Federal facilities, the project has tremendous potential. The results of the study presently being conducted on land classification and drainage will determine the feasibility and costs of developing the project. Enough information should be gathered by the end of 1983 so that development of the project can proceed in 1984.

Project Interest: The project is strongly supported by the interested landowners in the six counties who have formed a steering committee and by the State of South Dakota. The landowners have contributed $100,000 toward investigations to determine feasibility. In addition, the CENDAK people and the State are proposing to provide additional funds and services for completion of the plan formulation.

Remarks: Funds in the amount of $565,000 are required for this 2-year feasibility study with $545,000 required the first year.

BACKGROUND STATEMENT

GENERAL INVESTIGATIONS
FEASIBILITY

PROJECT: Blue Holes Reservoir

REGION: Upper Missouri

LOCATION: Wind River approximately 1.5 miles downstream from the confluence of Dinwoody Creek and the Wind River - State of Wyoming

DESCRIPTION: Blue Holes is a potential storage reservoir with a capacity of 357,000 acre-feet and a firm yield of 174,000 acre-feet. The proposed reservoir would be a multipurpose project with benefits for new and supplemental irrigation, hydropower, municipal and industrial water, recreation, and fish and wildlife.

The dam would be an earthfill structure with a concrete spillway and radial gates for regulating releases. Physical dimensions of the structure would be 265 feet high and 5,800 feet in length for approximately 27,000,000 cubic yards of material. Capacity of the spillway would be 75,000 ft^3/s.

STATUS: In September 1981 an appraisal-level study titled Wind River Basin Water Supply Study was completed. Blue Holes was an alternative that the State of Wyoming and the local residents are supporting for development. The 1981 session of the State Legislature appropriated $500,000 for feasibility studies. The Bureau has been requested to start the study with these funds of the Wyoming Water Development Commission.

JUSTIFICATION: Using January 1980 costs, the annual cost of water for the Blue Holes Reservoir would be $64 per acre-foot. Municipal, industrial, and irrigation water users have identified a need for a new water supply of 190,000 acre-feet. Compounding this need is the concern by the Wind River Reservation Indian Tribes to maintain their reserved water and to maintain their fishery in the Wind River. Blue Holes Reservoir would provide for the needs and concerns of all interested parties in the Wind River Basin.

PROJECT INTEREST: The Wind River Development Committee was formed by supporters of water resource development in the Wind River Basin. This group favors the development of the Blue Holes Dam and Reservoir. The 1981 session of the Wyoming State Legislature appropriated $500,000 for feasibility studies and the Bureau has been requested to start the study with these funds.

INVESTIGATIONS COSTS: The total estimated Federal cost of a 3-year feasibility investigation is $670,000 with $150,000 required the first year.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of Rule XXVI of the Standing Rules of the Senate, the Committee notes that no changes in existing law would be made by the bill, S. 2443, as reported.

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